

Appln. No. 09/910,657

Amdt. dated Jan. 11, 2005

Reply to Office Action of Oct. 04, 2004

Docket No. CH9-2000-0004 (246)

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Amendments to the Claims:

Applicants respectfully request that the following listing of claims be entered in lieu of all prior versions and listings of claims in the instant application:

Listing of Claims:

I. (Currently Amended) In a speech recognition system, a method of speech recognition comprising:

(a) receiving an input that specifies a context in which the speech recognition system processes speech such that the speech recognition system is able to anticipate content within a speech signal to be received based upon the context;

(b) creating a context-enhanced database using information derived from said input;

(c) preparing a first textual output from the speech signal by performing a speech recognition task to convert said speech signal into said first textual output comprising computer processable segments, wherein said context-enhanced database is accessed to improve the speech recognition rate, wherein said speech signal is parsed into a plurality of computer processable speech segments, wherein said first textual output comprises a plurality of text segments, each corresponding to one of the computer processable speech segments, and wherein selective ones of the text segments are generated by matching a computer processable speech segment against an entry within the context-enhanced database, said context-enhanced database including a plurality of entries, each entry comprising a speech utterance and a corresponding textual segment for the speech utterance;

(d) enabling editing of said first textual output to generate a final voice-generated output; and

(e) making said final voice-generated output available.

2. (Currently Amended) The method of claim 1, wherein each of said computer-processable speech segments represent digitally encoded spoken words, and wherein each of the text segments is a word in text format. ~~said speech signal represents words and said words are processed separately during said speech recognition task by identifying a matching word in said context-enhanced database for each of said words, and adding said matching word to said first output~~
3. (Currently Amended) The method of claim 1, wherein during said speech recognition task, said speech signals are analyzed to determine whether matches exist within the context-enhanced database for the computer-processable speech segments before another database is searched to locate text matches for the computer-processable speech segments.
4. (Currently Amended) The method of claim 2, wherein during said speech recognition task, said speech signals are analyzed to determine whether matches exist within the context-enhanced database for the computer-processable speech segments before another database is searched to locate text matches for the computer-processable speech segments.
5. (Currently Amended) The method of claim 2, wherein a second database is accessed to find a matching word for each of said words for which no matching word was found in said context-enhanced database, wherein the context-enhanced database is created from said input and from entries within the second database.

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6. (Original) The method of claim 1, wherein at least two steps selected from the group consisting of steps (a), (b), (c), (d), and (e) are performed concurrently.
7. (Currently Amended) The method of claim 1, wherein ~~said computer processable segments are processable speech utterances and said textual segments of said context enhanced database represent words.~~
8. (Currently Amended) The method of claim 1, wherein said speech signal is interpreted as part of said speech recognition task in light of entries ~~[[words]]~~ included in said context-enhanced database.
9. (Currently Amended) The method of claim 1, ~~wherein the said input is received from an application program.~~ further comprising the step of:
in a pre-processing step that defines contents for an anticipated voice-generated output that is to be generated by a user of a computer system upon which the method of speech recognition executes, automatically deriving the input of the receiving step based upon active applications currently executing upon the computer system.
10. (Currently Amended) The method of claim ~~[[1]]~~ 9, further comprising the steps of:
extracting content from electronic documents enabled within the active applications; and
generating a word list from the extracted content, wherein the derived input comprises the word list, wherein said input is received from at least one of the group consisting of an electronic mail, a history of electronic mails, a document currently on a screen of the computer system, a chain of related documents, linked documents, a folder,

~~a directory, an attachment received with an Electronic mail, a spread sheet, a cache memory of a computer system, history information recorded by a web browser, a knowledge management system, an incoming message, and a received facsimile, and a result of a database search.~~

11. (Currently Amended) The method of claim ~~[[1]]~~10, ~~wherein said voice-generated output is generated based upon a context defined by said context-enhanced database, wherein the creating step further comprises the step of:~~

creating the context-enhanced database from those entries of a context-independent database having words included within the word list.

12. (Original) The method of claim 1, wherein said voice-generated output is a physical output.

13. (Original) The method of claim 12, wherein said voice-generated output is temporarily put into a memory.

14. (Currently Amended) The method of claim 1, wherein said editing is enabled by highlighting words of said first textual output having a predetermined likelihood of misinterpretation of said speech signal.

15. (Original) The method of claim 1, wherein said context-enhanced database is derived from an existing database based upon said input.

16. (Currently Amended) The method of claim 1, wherein said context-enhanced database is dynamically generated specifically for the specified context, wherein the method further comprises the step of:
detecting an event signifying the context has changed; and
responsively updating said context-enhanced database.
17. (Currently Amended) The method of claim ~~[[1]]9~~, ~~wherein said context-enhanced database is dynamically updated,~~ further comprising the steps of:
automatically detecting a change in the active applications;
responsive to the detected change, automatically deriving new input; and
responsive to the new input, dynamically updating the context-dependant database based upon the new input.
18. (Original) The method of claim 1, wherein one or more of a synonym lexicon and a meaning variants database is accessed when preparing said voice-generated output.
19. (Currently Amended) A speech processing system comprising:
a first module, said first module automatically creating a context-enhanced database using information derived from an input that specifies a context in which the speech processing system processes speech such that the speech processing system is able to anticipate content within a speech signal to be received based upon the context;
a speech recognition system, said speech recognition system converting ~~[[a]]~~ the speech signal into speech segments that are processable by said speech recognition system, wherein said context-enhanced database is accessed to find matching text segments for said speech segments;

a second module, said second module preparing [[an]] a textual output comprising said matching text segments; and

a third module, said third module enabling editing of said textual output to generate a final voice-generated output, and for making said final voice-generated output available.

20. (Currently Amended) The system of claim 19, wherein said input is ~~received~~ derived from at least one of the group consisting of an electronic mail, a history of electronic mails, ~~a document currently on a screen of a computer system, a chain of related documents, linked documents, a folder, a directory,~~ an attachment received with an electronic mail, a spread sheet, ~~a cache memory of a computer system,~~ history information recorded by a web browser, ~~a knowledge management system, an incoming message, and~~ a received facsimile, ~~and a result of a database search.~~

21. (Original) The system of claim 19, wherein said speech recognition system processes words separately by identifying a matching word in said context-enhanced database for each of the words, and adding said matching word to said output.

22. (Currently Amended) The system of claim 19, wherein the speech recognition system analyzes said speech signals to determine whether matches exist within the context-enhanced database for the speech segments before another database is searched to locate text matches for the speech segments.

23. (Original) The system of claim 19, comprising a second database, wherein said second database is accessible if no matching word is available in said context-enhanced database.

24. (Currently Amended) The system of claim 19, comprising a fourth module that derives said input from [[an]] at least one active application program currently executing upon a computer system upon which the speech processing system executes.
25. (Currently Amended) The system of claim 19, wherein said voice-generated output is generated based upon [[a]] the specified context~~defined by said context-enhanced database.~~
26. (Original) The system of claim 19, wherein said voice-generated output is a physical output.
27. (Original) The system of claim ~~[[19]]~~26, further comprising a memory for storing said voice-generated output.
28. (Original) The system of claim 19, further comprising a fifth module that enables said editing of said output.
29. (Original) The system of claim 19, further comprising a database from which said context-enhanced database is derived.
30. (Original) The system of claim 19, further comprising a synonym lexicon which is linked when used.
31. (Original) The system of claim 19, further comprising a meaning variants database which is linked when used.

32. (Original) The system of claim 19, wherein said first module for automatically creating a context-enhanced database is a pre-processing module.
33. (Original) The system of claim 19, further comprising a meaning extraction system.
34. (Currently Amended) The system of claim 21, wherein said speech recognition system analyzes said speech signals to determine whether matches exist within the context-enhanced database for the speech segments before another database is searched to locate text matches for the speech segments.
35. (Original) The system of claim 21, comprising a second database, wherein said second database is accessible if no matching word is available in said context-enhanced database.
36. (Original) The system of claim 21, comprising a fourth module that derives said input from an application program.
37. (Original) The system of claim 21, wherein said voice-generated output is generated based upon a context defined by said context-enhanced database.
38. (Original) The system of claim 21, wherein said voice-generated output is a physical output.

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39. (Currently Amended) The system of claim ~~[[21]]~~ 38, further comprising a memory for storing said voice-generated output.
40. (Original) The system of claim 21, further comprising a fifth module that enables said editing of said output.
41. (Original) The system of claim 21, further comprising a database from which said context-enhanced database is derived.
42. (Original) The system of claim 21, further comprising a synonym lexicon which is linked when used.
43. (Original) The system of claim 21, further comprising a meaning variants database which is linked when used.
44. (Original) The system of claim 21, wherein said first module for automatically creating a context-enhanced database is a pre-processing module.
45. (Original) The system of claim 21, further comprising a meaning extraction system.
46. (Currently Amended) A machine-readable storage, having stored thereon a computer program having a plurality of code sections executable by a machine for causing the machine to perform the steps of:

- (a) receiving an input that specifies a context in which a speech recognition system processes speech such that the speech recognition system is able to anticipate content within a speech signal to be received based upon the context;
- (b) creating a context-enhanced database using information derived from said input;
- (c) preparing a first textual output from the speech signal by performing a speech recognition task to convert said speech signal into said first textual output ~~comprising computer-processable segments~~, wherein said context-enhanced database is accessed to improve the speech recognition rate, wherein said speech signal is parsed into a plurality of computer processable speech segments, wherein said first textual output comprises a plurality of text segments, each corresponding to one of the computer processable speech segments, and wherein selective ones of the text segments are generated by matching a computer processable speech segment against an entry within the context-enhanced database, said context-enhanced database including a plurality of entries, each entry comprising a speech utterance and a corresponding textual segment for the speech utterance;
- (d) enabling editing of said first textual output to generate a final voice-generated output; and
- (e) making said final voice-generated output available.

47. (Currently Amended) The machine-readable storage of claim 46, wherein each of said computer-processable speech segments represent digitally encoded spoken words, and wherein each of the text segments is a word in text format. ~~said speech signal represents words and said words are processed separately during said speech recognition task by identifying a matching word in said context-enhanced database for each of said words, and adding said matching word to said first output~~

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48. (Currently Amended) The machine-readable storage of claim 46, wherein during said speech recognition task, said speech signals are analyzed to determine whether matches exist within the context-enhanced database for the computer-processable speech segments before another database is searched to locate text matches for the computer-processable speech segments.
49. (Currently Amended) The method of claim 47, wherein during said speech recognition task, said speech signals are analyzed to determine whether matches exist within the context-enhanced database for the computer-processable speech segments before another database is searched to locate text matches for the computer-processable speech segments.
50. (Currently Amended) The method of claim 47, wherein a second database is accessed to find a matching word for each of said words for which no matching word was found in said context-enhanced database, wherein the context-enhanced database is created from said input and from entries within the second database.
51. (Original) The machine-readable storage of claim 46, wherein at least two steps selected from the group consisting of steps (a), (b), (c), (d), and (e) are performed concurrently.
52. (Currently Amended) The machine-readable storage of claim 46, wherein said computer-processable segments are processable speech utterances and said textual segments of said context enhanced database represent words.

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53. (Currently Amended) The machine-readable storage of claim 46, wherein said speech signal is interpreted as part of said speech recognition task in light of entries [[words]] included in said context-enhanced database.

54. (Currently Amended) The machine-readable storage of claim 46, ~~wherein the said input is received from an application program.~~ further comprising the step of:
in a pre-processing step that defines contents for an anticipated voice-generated output that is to be generated by a user of a computer system upon which the method of speech recognition executes, automatically deriving the input of the receiving step based upon active applications currently executing upon the computer system.

55. (Currently Amended) The machine-readable storage of claim ~~[[46]]~~ 54, further comprising the steps of:

extracting content from electronic documents enabled within the active applications; and

generating a word list from the extracted content, wherein the derived input comprises the word list. ~~wherein said input is received from at least one of the group consisting of an electronic mail, a history of electronic mails, a document currently on a screen of the computer system, a chain of related documents, linked documents, a folder, a directory, an attachment received with an Electronic mail, a spread sheet, a cache memory of a computer system, history information recorded by a web browser, a knowledge management system, an incoming message, and a received facsimile, and a result of a database search.~~

56. (Currently Amended) The machine-readable storage of claim ~~[[46]]~~55, ~~wherein said voice-generated output is generated based upon a context defined by said context-enhanced database, wherein the creating step further comprises the step of:~~
creating the context-enhanced database from those entries of a context-independent database having words included within the word list.
57. (Original) The machine-readable storage of claim 46, wherein said voice-generated output is a physical output.
58. (Original) The method of claim 57, wherein said voice-generated output is temporarily put into a memory.
59. (Currently Amended) The machine-readable storage of claim 54, wherein said editing is enabled by highlighting words of said first textual output having a predetermined likelihood of misinterpretation of said speech signal.
60. (Original) The machine-readable storage of claim 46, wherein said context-enhanced database is derived from an existing database based upon said input.
61. (Currently Amended) The machine-readable storage of claim 46, wherein said context-enhanced database is dynamically generated specifically for the specified context, wherein the method further comprises the step of:
detecting an event signifying the context has changed; and
responsively updating said context-enhanced database.

62. (Currently Amended) The machine-readable storage of claim ~~[[46]]~~55, ~~wherein said context enhanced database is dynamically updated.~~, further comprising the steps of:

automatically detecting a change in the active applications;
responsive to the detected change, automatically deriving new input; and
responsive to the new input, dynamically updating the context-dependant database based upon the new input.

63. (Original) The machine-readable storage of claim 46, wherein one or more of a synonym lexicon and a meaning variants database is accessed when preparing said voice-generated output.

64. (New) In a speech recognition system, a method of speech recognition comprising the steps of:

receiving input that specifies a context in which the speech recognition system processes speech;

creating a context-enhanced database based upon the input;

parsing a received speech signal into a plurality of speech segments;

comparing said speech segments against entries in the context-enhanced database;

when matching entries are found in the comparing step, for each matching entry retrieving a textual segment from the context-enhanced database that is associated with the matching entry; and

generating textual output for the speech signal that includes the[®] retrieved textual segments.

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65. (New) The method of claim 64, further comprising the steps of:
when matching entries are not found in the comparing step, generating a textual segment for the speech segment using a context-independent database, wherein the generated textual output includes the generated textual segments.
66. (New) The method of claim 65, wherein entries within the context-enhanced database are a subset of entries contained within the context-independent database that are derived from the context-independent database and the input.
67. (New) The method of claim 64, further comprising the steps of:
in a pre-processing step that defines contents for an anticipated voice-generated output that is to be generated by a user of a computer system upon which the method of speech recognition executes, automatically deriving the input of the receiving step based upon active applications currently executing upon the computer system.
68. (New) The method of claim 67, further comprising the steps of:
extracting content from electronic documents enabled within the active applications; and
generating a word list from the extracted content, wherein the derived input comprises the word list.
(page 10, lines 20-24)
69. (New) The method of claim 68, wherein the creating step further comprises the step of:
creating the context-enhanced database from those entries of a context-independent database having words included within the word list.

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70. (New) The method of claim 67, further comprising the steps of:
automatically detecting a change in the active applications;
responsive to the detected change, automatically deriving new input; and
responsive to the new input, modifying the context-dependant database based
upon the new input.
71. (New) The method of claim 70, further comprising the step of:
repeating the detecting step, the deriving step, and the modifying step of claim 70
to ensure the context-dependant database includes information for a current state of the
active applications.